Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A device comprising:

a heat sink; and

a radiation-emitting optoelectronic component which is connected to said heat sink and is intended for pulsed operation with the pulse duration D,

wherein said heat sink is arranged such that temperature changes of the optoelectronic component take place with a thermal time constant τ during pulsed operation, ~~and~~

wherein the thermal time constant τ is matched to the pulse duration D so that the thermal time constant τ is greater than half the pulse duration D in order to reduce the amplitude of the temperature changes.

2. (Canceled).

3. (Previously Presented) The device as claimed in claim 1, wherein the thermal time constant τ is $\tau > D$.

4. (Previously Presented) The device as claimed in claim 1, wherein the temperature changes are less than $\Delta T = 12$ K.

5. (Previously Presented) The device as claimed in claim 1, wherein pulsed operation is effected at a pulse frequency in the range from 0.1 Hz to 10 Hz.

6. (Previously Presented) The device as claimed in claim 1, wherein the optoelectronic component has an optical output power of 20 W or more.

7. (Previously Presented) The device as claimed in claim 1, wherein the heat sink is actively cooled.

8. (Previously Presented) The device as claimed in claim 7, wherein the heat sink has one or more microchannels through which a coolant flows.

9. (Previously Presented) The device as claimed in claim 8, wherein-a wall of the heat sink that adjoins the optoelectronic component has a wall thickness of 0.5 mm or more.

10. (Previously Presented) The device as claimed in claim 8, wherein a wall of the heat sink that adjoins the optoelectronic component has a wall thickness of between 1 mm and 2 mm inclusive.

11. (Previously Presented) The device as claimed in claim 1, wherein-the heat sink contains copper.

12. (Previously Presented) The device as claimed in claim 1, wherein the optoelectronic component is a laser diode bar.

13. (Previously Presented) A method for producing the device as claimed in claim 8, wherein a wall of the heat sink that adjoins the optoelectronic component has a wall thickness and the temperature change and/or the maximum temperature of the component during operation is set by dimensioning the wall thickness.

14. (Currently Amended) A method for producing a device having a radiation-emitting optoelectronic component which is connected to a heat sink and is intended for pulsed operation with the pulse duration D, temperature changes of the optoelectronic component taking place with a thermal time constant τ during pulsed operation, the method comprising:

setting the thermal time constant τ to match the pulse duration D so that the thermal time constant τ is greater than half the pulse duration D in order to reduce the amplitude of the temperature change.

15. (Previously Presented) The method as claimed in claim 14, wherein the thermal time constant τ is set by dimensioning the area and/or the thickness of a substrate on which the optoelectronic component is produced.